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Attorneys for Defendant and Counterclaimant
FAIRCHILD SEMICONDUCTOR CORPORATION

UNITED STATES DISTRICT COURT

FOR THE NORTHERN DISTRICT OF CALIFORNIA

SAN FRANCISCO DIVISION

ALPHA & OMEGA SEMICONDUCTOR, INC., a California corporation; and ALPHA & OMEGA SEMICONDUCTOR, LTD., a Bermuda corporation,

Plaintiffs and Counterdefendants,

v.

FAIRCHILD SEMICONDUCTOR CORP., a Delaware corporation,

Defendant and Counterclaimant.

AND RELATED COUNTERCLAIMS.

Case No. C 07-2638 JSW (EDL)
(Consolidated with Case No. C 07-2664 JSW)

DECLARATION OF DR. RICHARD A. BLANCHARD IN SUPPORT OF FAIRCHILD SEMICONDUCTOR CORPORATION'S MOTION TO STRIKE PLAINTIFFS' PATENT LOCAL RULE 3-1 DISCLOSURE

Date: December 11, 2007
Time: 9:00 a.m.
Courtroom: Hon. Elizabeth D. Laporte

I, Dr. Richard A. Blanchard, declare as follows:

1. I have been retained as an expert regarding semiconductor technology by Defendant and Counterclaimant Fairchild Semiconductor Corporation ("Fairchild"). This Declaration is submitted in support of Fairchild's Motion to Strike the Patent Local Rule 3-1 Disclosure of Plaintiffs and Counterclaimants Alpha & Omega Semiconductor, Inc., and Alpha & Omega Semiconductor,

Ltd., (collectively, "AOS"). I have personal knowledge of the matters stated herein and if called to testify as a witness, I could and would competently testify thereto.

2. I received a BSEE degree in 1968 and an MSEE degree in 1970 from MIT, and a Ph.D in Electrical Engineering from Stanford University in 1982. I was an Associate Professor, Assistant Division Chairman of the Engineering & Technology Division at Foothill College from 1974 to 1978, where I developed the curriculum for the Semiconductor Technology Program.

3. I have over 35 years of experience in the semiconductor and electronics industries. I am currently employed as the Director of Advanced Technologies at the Silicon Valley Expert Witness Group, Inc. ("SVEWG") and have extensive consulting experience since 1998 for SVEWG. Prior to working for SVEWG, I was Principal Engineer and Division Manager of the Electrical/Electronic Division of Failure Analysis (Exponent) Associates, Inc. from 1991 to 1998. As Division Manager, my duties included failure analysis and reverse engineering of solid-state electronic components and circuits, and failure analysis of electric and electronic systems, subsystems, and components, and consulting with respect to Power MOS and Smart Power Technologies. Prior to that, I was employed by IXYS Corporation from 1987-1991, by Siliconix, Inc., from 1982-1987, by Supertex, Inc., from 1976-1982, by Cognition, Inc., from 1976-1978, by Foothill College from 1974-1978, as an independent consultant to the semiconductor industry from 1974-1976 and by Fairchild Semiconductor from 1970-1974.

4. I have testified in court and in depositions on numerous occasions as an expert witness, and I have served as an arbitrator and as a court-appointed special master. I have published several books and numerous articles on semiconductor design and process development as well as failure analysis. I hold more than 130 U.S. patents on semiconductor technology. I am a member of the IEEE, the Electrostatic Discharge Society, and the International Microcircuits and Packaging Society.

5. I have reviewed AOS's Supplemental Disclosure of Asserted Claims and Preliminary Infringement Contentions ("AOS's Supplemental PICs") that were served on or about October 19, 2007.

6. I am very familiar with several techniques commonly used in the semiconductor industry for reverse-engineering semiconductor devices. Reverse-engineering is a term that refers to

methods for determining the technological properties and/or structure of a device by analysis techniques.

7. One reverse-engineering technique commonly used to analyze semiconductor devices is secondary ion mass spectrometry ("SIMS"). SIMS is a technique for the characterization of solid surfaces and thin films. In SIMS, the surface being tested is bombarded with a highly collimated beam of primary ions, causing the surface to emit material through a sputtering process, of which only a fraction is ionized. The "secondary" ions are measured with a mass spectrometer to determine the elemental, isotopic or molecular composition of the surface. SIMS is a very sensitive analytic technique. Using SIMS, one can determine concentrations of materials up to a resolution in the range of approximately 10 parts in a billion. SIMS is often used to obtain a doping profile showing the concentration as a function of depth into the silicon of different dopants, such as phosphorus, boron and arsenic, that may be present in a cross-section of a semiconductor device. This information is obtained by continuously sputtering away the surface atoms, so that the concentration information is obtained.

8. Another reverse-engineering technique commonly used to analyze semiconductor devices is Scanning Capacitance Microscopy ("SCM"). SCM is a technique in which the surface being tested is coated with an oxide. A narrow probe electrode is then held just above, and scanned across the surface being tested. SCM characterizes the surface being tested using information obtained from the change in electrostatic capacitance between the surface and the probe. SCM can be used to determine the amount of electrically active dopant present in the exposed surface of a device being analyzed. SCM is often used to obtain information regarding the conductivity type (n-type or p-type) and the range of relative doping concentration at lateral and vertical distances throughout a substrate of a cross-section of a semiconductor device.

9. Another reverse-engineering technique commonly used to analyze semiconductor devices is Scanning Electron Microscopy ("SEM"). SEM is a technique for high-resolution imaging of surfaces. Whereas a typical microscope uses visible light to provide images, a scanning electron microscope uses electrons. An incident electron beam is raster-scanned across the surface being tested, and the resulting electrons emitted from the surface are collected to form an image of the

surface. Qualitative and quantitative chemical analysis information can be obtained using an energy dispersive x-ray spectrometer ("EDS") with the scanning electron microscope. Using the optional EDS capability of a scanning electron microscope, one can determine concentrations of materials up to a resolution in the range of approximately 1 part in a thousand. SEM is often used to determine structures of interest by cross-sectioning a device of interest and then using a staining technique. Other techniques such as SIMS and SCM are often then used to obtain further information with respect to the structures of interest.

10. AOS's Supplemental PICs do not contain any SIMS graphs or SCM images, and contain only one SEM image. Consequently, AOS failed to provide results of commonly available techniques to support its contentions of infringement. For example, AOS does not support its contention that certain regions are of certain conductivity types with results of an SCM analysis, even though an SCM analysis is capable of showing conductivity types. In addition, AOS does not support its contention that the doping concentration in the body region of the accused device is "compensated" by a second implant. AOS has not provide any reverse-engineering data, such as SIMS graphs, in support of its PICs that shows the doping concentration profile in the body region, much less that it is in any way "compensated" as required by the claims of the '776 patent. SIMS analysis would most likely show such a doping concentration profile. In addition, AOS does not support its contention that certain regions show a diffusion boundary when techniques, such as SCM analysis, are available to show this. Consequently, much of AOS's Supplemental PICs are based upon unsupported conclusions.

I declare under penalty of perjury under the laws of the United States that the foregoing is true and correct to the best of my knowledge and belief.

Executed this 6th day of November, 2007, in Mt. View, California.

By: Richard A. Blanchard
Dr. Richard A. Blanchard

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